

# 1X2A

## Half-Wave Vacuum Rectifier

### 9-PIN MINIATURE TYPE

#### GENERAL DATA

##### Electrical:

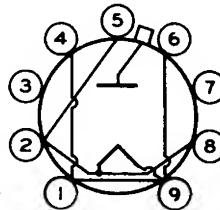
Filament, Coated:

	Min.	Av.	Max.	
Voltage (AC) . . . . .	1.05	1.25	1.45	volts
Current at 1.25 volts . . . . .	-	0.2	-	amp
Direct Interelectrode Capacitances (Approx.): <sup>a</sup>				
Plate to filament & internal shield . . . . .	1			$\mu\mu\text{f}$

##### Mechanical:

Operating Position. . . . . Any  
Maximum Overall Length. . . . . 2-27/32" ←  
Seated Length . . . . . 2-7/16"  $\pm$  1/8"  
Diameter. . . . . 0.750" to 0.875"  
Dimensional Outline . . . . . See General Section  
Bulb. . . . . T6-1/2  
Cap . . . . . Skirted Miniature (JEDEC No.C1-2 or C1-33)  
Base. . . . . Small-Button Noval 9-Pin (JEDEC No.E9-1)  
Basing Designation for BOTTOM VIEW. . . . . .9Y

Pin 1 - Filament,  
Internal  
Shield  
Pin 2 - Filament  
Pin 3 - Limited  
Connection<sup>b</sup>  
Pin 4 - Same as Pin 1



Pin 5 - Same as Pin 2  
Pin 6 - Same as Pin 1  
Pin 7 - Same as Pin 3  
Pin 8 - Same as Pin 2  
Pin 9 - Same as Pin 1  
Cap - Plate

#### PULSED-RECTIFIER SERVICE

Maximum Ratings, Design-Center Values Except as Noted:

For operation in a 525-line, 30-frame system<sup>c</sup>.

##### INVERSE PLATE VOLTAGE:

Total dc and peak (Absolute maximum) <sup>d</sup> . . . . .	20000 <sup>e</sup> max.	volts
DC. . . . .	16000 max.	volts
PEAK PLATE CURRENT. . . . .	45 max.	ma
AVERAGE PLATE CURRENT . . . . .	.05 max.	ma

##### Characteristics, Instantaneous Value:

Tube Voltage Drop for plate ma. = 7 . . . . . 100 volts

<sup>a</sup> Without external shield.

<sup>b</sup> See Operating Considerations.

<sup>c</sup> As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.

<sup>d</sup> The duration of the voltage pulse must not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

<sup>e</sup> Under no circumstances should this absolute-maximum value be exceeded.

← Indicates a change.



RADIO CORPORATION OF AMERICA  
Electron Tube Division  
Harrison, N. J.

DATA  
1-62

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## OPERATING CONSIDERATIONS

*Socket Connections.* Socket terminals 3 and 7 may be used as tie points for components at or near filament potential; otherwise, do not use.

*Measurement of Filament Voltage.* To measure the filament voltage when the filament is at a high dc potential with respect to ground, it is recommended that a simple method utilizing visual comparison of the filament temperature be used. The color temperature of the filament, operating from a pulse-or-rf-power source, may be checked by observing in a darkened room the reflection of the incandescent filament upon the surface of the internal shield. A visual comparison of this color temperature with that obtained when the filament of another 1X2A is operated from a dc or low-frequency ac supply of 1.25 volts, provides a convenient means for adjusting the amount of excitation to produce 1.25 volts (rms) at the filament terminals.

*The high voltages at which the 1X2A is operated are very dangerous.* Great care should be taken in the design of apparatus to prevent the operator from coming in contact with these high voltages. Particular care against fatal shock should be taken in the measurement of filament voltage. Under all circumstances, circuit parts which may be at high potentials should be enclosed or adequately insulated.

*X rays.* The voltages employed in some television receivers and other high-voltage equipment are sufficiently high that high-voltage rectifier tubes may produce X rays which can constitute a health hazard unless such tubes are adequately shielded. Relatively simple shielding should prove adequate, but the need for this precaution should be considered in equipment design.

